"Practice-Based Research Methods for New Media Design in Museums and Interpretive Interactive Environments"

What practice-based research methods allow the design and development of an interactive touch screen interface for children between the age of 6-13 years, which is informative, engaging and exploratory within the Powerhouse Museum Sydney?

By

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Submission of Masters Thesis

Candidate's Certificate of Authorship

I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

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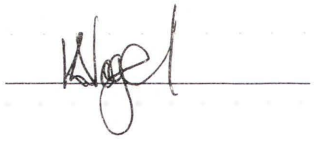

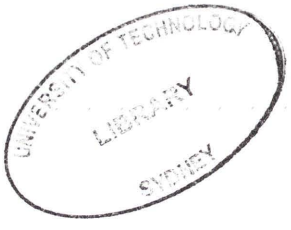

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1/ABSTRACT

Design and research methods specifically for the development of interactive touch screen interfaces in a museum contexts was limited to and relied on summative evaluation to determine the effectiveness of the design. Further more, curators were relied upon to determine content and structure narratives within the exhibitions. This resulted in a subjective narrative and a design that doesn't necessarily engage or appeal to the audience.

The objective of the research was to develop an interactive table touch screen interface about the Moon for children between the ages of 6-13 years within the Powerhouse Museum in Sydney. The interface was developed using a practice-based design and research approach to discover the necessary methods for effective design. Therefore the interactive touch screen interface was developed from a user-centered/participatory iterative design approach, which included a diverse range of methods.

The methods of research required for the design development were structured within a reconfigured framework in which multiple methods of research and design were practiced to inform and justify design decisions. The methods of research operated within an iterative cyclic process in which a mixed-fidelity prototype was utilised. The reconfigured framework not only provided a structure in which the design was justified by data, it also allowed for basic design practices to be incorporated into the structure, these included critical reflection and intervention to interpret and inform the design.

The reconfigured framework allowed qualitative and quantitative methods to feed into design decisions. As a result of the hybrid approach a series of statistical data analysis, observation and interpretation were necessary to decipher testing results and raw data from cultural probe, low-fidelity and high-fidelity prototype testing and evaluations.

As well as these methods observation, unstructured interviews and cultural probe testing were carried out informed by literature and formative research methods. These methods were broken down into phases and roles in which the structure and relationship between each practice is visually represented and directed. The framework was visualised to allow future designers to utilise this structure.

The study revealed that the combination of qualitative and quantitative methods and user-centered design was essential and unavoidable for the design and development of the interactive touch interface. This was represented by the successful design and development of a high-fidelity prototype that proved to engage, inform and allowed an exploratory experience for the target audience. This development was a direct result of the reconfigured framework

and the focus on user participation as a key component in which data, reflection and interventions were utilised to inform the design.